

**AMENDMENTS TO THE CLAIMS:**

This listing of the claims will replace all prior listings and versions of claims in the application.

**CLAIMS:**

1. (previously presented) A filled and polymerizable dental material, wherein it contains:

- a) an organic binder,
  - b) a nanoscale filler comprising nanoparticles, said nanoscale filler having the following features:
    - at least 50% by weight of the nanoparticles have a particle diameter of less than 200 nm,
    - at least 20 particle number% of the nanoparticles are aggregated particles,
    - the nanoscale filler is organically surface-modified,
  - c) at least one inorganic and/or organic filler selected from the group consisting of a ground filler having a mean particle size between 0.2  $\mu\text{m}$  and 50  $\mu\text{m}$  and a spherical filler having a mean particle size between 0.1  $\mu\text{m}$  and 50  $\mu\text{m}$ .
2. (currently amended) The dental material as claimed in claim 1, wherein it said dental material contains 1 to 99% by weight-of organic binder a).
3. (currently amended) The dental material as claimed in claim 1 or 2, wherein it said dental material contains 0.1 to 90% by weight of nanoscale filler b).
4. (currently amended) The dental material as claimed in claim 1 or 2, wherein it said dental material contains 0.1 to 95% by weight of inorganic and/or organic filler c).

5. (currently amended) The dental material as claimed in claim 1 or 2, wherein it  
said dental material additionally contains pyrogenic and/or wet-precipitated silicic acids for adjustment of the viscosity.
6. (currently amended) The dental material as claimed in claim 5,-wherein it said dental material contains 0 to 30% by weight of the pyrogenic and/or wet-precipitated silicic acids for adjustment of the viscosity.
7. (previously presented) The dental material as claimed in claim 1 or 2, wherein the organic binder a) is a compound or a mixture of a number of compounds which contains free-radical polymerizable and/or cationically and/or anionically polymerizable groups and/or groups which allow curing by means of a condensation, addition and/or acid-base reaction.
8. (previously presented) The dental material as claimed in claim 1 or 2, wherein the nanoscale filler b) is a metal, semimetal or mixed metal oxide, silicate, nitride, sulfate, titanate, zirconate, stannate, tungstate or a mixture of these compounds.
9. (previously presented) The dental material as claimed in claim 8, wherein the nanoscale filler b) is silicon dioxide.
10. (previously presented) The dental material as claimed in claim 1 or 2, wherein the filler c) is a spherical filler, quartz powder, glass powder, glass ceramic powder or a mixture of these powders.
11. (previously presented) The dental material as claimed in claim 1 or 2, wherein the inorganic and/or organic filler c) is a filled or unfilled chip polymer and/or bead polymer.
12. (previously presented) The dental material as claimed in claim 1 or 2, wherein the inorganic and/or organic filler c) is surface-modified and has functional groups on

- its surface which can react chemically with the organic binder a) or have a high affinity for the organic binder a).
13. (previously presented) The dental material as claimed in claim 1 or 2, wherein the dental material additionally contains an initiator or a number of initiators and the dental material optionally contains a coinitiator or a number of coinitiators.
14. (previously presented) The dental material as claimed in claim 1 or 2, wherein it is X-ray opaque.
15. (currently amended) The use of the A process for prosthetic, preservative, or preventive dentistry, dental material as claimed in claim 1 or 2, comprising the steps of:
- a) making available of:
- a1) an organic binder,
- a2) an at least partially aggregated or substantially agglomerated nanoscale filler,
- a3) an agent for the organic surface modification of the filler a2),
- a4) at least one inorganic and/or organic filler selected from the group consisting of a ground filler having a mean particle size between 0.2 µm and 50 µm and a spherical filler having a mean particle size between 0.1 µm and 50 µm;
- b) carrying out an organic surface modification of the filler a2) using the agent a3);

- c) incorporation of the surface-modified nanoscale filler into the organic binder until at least 50% by weight-of the nanoscale filler has a particle diameter of less than 200 nm;
  - d) incorporation of the filler a4) into the organic binder;  
wherein the steps c) and d) can be carried out in any desired sequence or simultaneously and where step b) is carried out before or simultaneously to the steps c) and/or d), and
- b) ii) processing using said dental material of step a)i) for prosthetic, preservative and or preventive dentistry.

16. (previously presented) A process for the production of dental materials, having the steps:
- a) making available of:
    - a1) an organic binder,
    - a2) an at least partially aggregated or substantially agglomerated nanoscale filler,
    - a3) an agent for the organic surface modification of the filler a2),
    - a4) at least one inorganic and/or organic filler selected from the group consisting of a ground filler having a mean particle size between 0.2 µm and 50 µm and a spherical filler having a mean particle size between 0.1 µm and 50 µm;
  - b) carrying out an organic surface modification of the filler a2) using the agent a3);
  - c) incorporation of the surface-modified nanoscale filler into the organic binder until at least 50% by weight-of the nanoscale filler has a particle diameter of less than 200 nm;

- d) incorporation of the filler a4) into the organic binder;  
wherein the steps c) and d) can be carried out in any desired sequence or simultaneously and where step b) is carried out before or simultaneously to the steps c) and/or d).
- 17. (previously presented) The process as claimed in claim 16, wherein the organic surface modification of the nanoscale fillers a2) is carried out directly in the organic binder.
- 18. (previously presented) The process as claimed in claim 16 or 17, wherein in step b) additional mechanical energy is introduced-
- 19. (previously presented) The process as claimed in claim 16 or 17, wherein the organic binder a1) is a compound or a mixture of a number of compounds which contains free radical-polymerizable and/or cationically and/or anionically polymerizable groups and/or groups which allow curing by means of a condensation, addition and/or acid-base reaction.
- 20. (previously presented) The process as claimed in claim 16 or 17, wherein the nanoscale filler a2) is a metal, semimetal or mixed metal oxide, silicate, nitride, sulfate, titanate, zirconate, stannate, tungstate or a mixture of these compounds.
- 21. (original) The process as claimed in claim 20, characterized in that the nanoscale filler a2) is silicon dioxide.
- 22. (previously presented) The process as claimed in claim 16 or 17,-wherein in the organic surface modification groups are introduced onto the surface of the nanoscale fillers a2) which can react chemically with the organic binder a1) or have a high affinity for the organic binder.

23. (previously presented) The process as claimed in claim 16 or 17,-wherein the agent employed for the organic surface modification is a silane, chlorosilane, silazane, titanate, zirconate and/or tungstate.
24. (previously presented) The process as claimed in claim 16 or 17, wherein the inorganic and/or organic filler a4) is a spherical filler, quartz powder, glass powder, glass ceramic powder or a mixture of these powders.
25. (previously presented) The process as claimed in claim 16 or 17, wherein the inorganic and/or organic filler a4) is a filled or unfilled chip polymer and/or bead polymer.
26. (previously presented) The process as claimed in claim 16 or 17, wherein the inorganic and/or organic filler a4) is organically surface-modified and thus has functional groups on its surface which can react chemically with the organic binder a1) or have a high affinity for the organic binder.